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ABSTRACT

The relationships typically existing between scores on reading tests and college grades are described. The four purposes are to: present some of the typical relationships between reading ability and college success; report upon some of the evidence supporting other possible predictors of college success; describe some of the problems associated with these predications; and suggest some alternate routes to improving the college success of less able students. College grades appear to be best predicted by previous grades. The next best predictors of college grades tend to be scores on reading tests or general aptitude tests. A third level of prediction may or may not be found through the use of study skills measures and personality measures. Reading improvement and study skills courses and programs may improve reading, grades, and retention. A possible alternate approach would involve assisting college faculty to directly help poor readers by improving course tests and by using more alternate teaching techniques which permit the poorer reader to learn more and demonstrate learning more clearly. Contains 28 references. (Author/SM)

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Predicting College Grades and Helping Colleagues to Assist Poor Readers to Succeed in College Courses

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Running head: READING AND COLLEGE GRADES

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Abstract

This paper describes the relationships typically existing between scores on reading tests and college grades. College grades appear to be best predicted by previous grades, either in high school or in college (r = .3 to .6). The next best predictors of college grades tend to be scores on reading tests (r = .2 to .4) or general aptitude tests such as the Nelson-Denny Reading Test and the tests of the American College Testing Program and the Scholastic Aptitude Testing Programs. A third level of prediction may or may not be found through use of study skills measures and personality measures. The majority of the variability in college (and high school) grades often is unpredictable.

Reading improvement and study skills courses and programs may improve reading, grades and retention. Wood and Burke (in a paired paper) suggest that an alternate approach also might be useful. This approach would involve assisting college faculty to directly help poor readers by improving course tests and by using more of the teaching techniques suggested by the Johnsons and Slavin (cooperative learning), by K. P. Cross (pre-lesson and post-lesson formative evaluation activities), and by Bloom and Block (mastery learning). All of these approaches tend to permit the poorer reader to learn more and demonstrate their learning more clearly.

Predicting College Grades and Helping Poor Readers to Succeed

"Students learn to read in the first three grades and read to learn during the remainder of their life." Two versions of this belief are expressed as the lead sentences to the examiner's manuals of the two most recent sets of Nelson-Denny Reading Tests. "Reading plays such an important role in academic and professional success that it deserves special consideration and attention" (Brown, Nelson, and Denny, 1973). "The ability to read well is so important in our culture that it is often the principal cause of success or of failure from the first grade of elementary school through college and into professional life" (Brown, Bennett and Hanna, 1981).

Purposes

The purposes of this paper are: (1) to present some of the typical relationships between reading ability and college success; (2) to report upon some of the evidence supporting other possible predictors of college success; (3) to describe some of the problems associated with these predictions; and (4) to suggest some alternate routes to improving the college success of less able students. The companion paper by Dr. Richard Burke continues this description of alternate routes to college success.

Correlations Between Reading Test Scores and College Success

NDRT scores and college grades. Wood (1982) reported positive correlations between the Nelson-Denny Reading Test Scores (Form C) of over 1000 college freshmen and their cumulative high school grade

point (r = .32), college freshmen grade point (r = .33), and college course grades in general psychology (.37), general sociology (.31), introductory speech (.23), and general English-writing (.23). Very similar correlations appear to be resulting from a study of nearly 14,000 students from the same midwestern university who took Form E of the Nelson-Denny Reading Test (NDRT-E). Geis and Carney (1979) reported a similar correlation (of r = .33) between a social science grade point average and NDRT-C scores while Gerow and Murphy (1980) correlated NDRT scores (probably Form C) with multiple-choice test scores in 10 separate introductory psychology classes to produce a median correlation of r = .56. Some researchers (Hawes, Heerman, Lamb, Lowenstein and Seltzer, 1982; Nisbet, Ruble and Schurr, 1982) have reported somewhat lower correlations while some (Blanton and Peck, 1964) have reported higher relationships between NDRT scores and college grades.

NDRT scores, ACT scores and college grades. Forms C, D, E and F of the Nelson-Denny Reading Tests were designed to reflect the vocabulary (100 questions) and the reading comprehension (36 questions) of secondary and post-secondary students. The American College Testing Program Tests (ACT) and the Scholastic Aptitude Tests (SAT) were designed to predict college success (Aleamoni and Oboler, 1978) and tend to correlate moderately with college GPA (.3 to .4). However, the intercorrelations among three of the four ACT tests, and the correlations among the ACT Composite Score, the SAT Verbal Test and the NDRT tests tend to be moderate to high. NDRT, SAT and ACT tests also tend to produce similar predictions of college grades (Wood, 1982). For example, the two subtests of the NDRT-C (vocabulary

and comprehension) produced an intercorrelation of r = .65. This correlation was lower than the correlations between the NDRT and the SAT verbal score (r = .79), and the correlation between the NDRT and the ACT composite score (.71) (Wood, 1982).

Summary. (1) Nelson-Denny Reading Test scores and scores from ACT and SAT tests do function as reading tests and do predict the kind of college success that is measured by college grades. (2) The typical correlations between these scores and college grades only accounts for from 5% to 25% of the variability of college grades.

Study Skills Inventories and Personality Tests as Predictors of College Grades

Nisbet, Ruble and Schurr (1982) used the Effective Study Test (EFST) and the Myers-Briggs Type Indicator (MGTI) to improve the prediction of the GPA and completion rate of "high risk college students." They reported that each of these two multi-dimensional measures added 11% to the predictability obtained through use of high school grade (percentile rank) and SAT scores. Thompson (1976) reported positive relationships (r = .21 to .32) between scores on a 47-item "Student Attitudes Inventory" and the cumulative GPA of students in six community colleges. The use of the inventory added 2% to 6% to the prediction based upon ACT scores alone. Brown (1972) and Brown and Holtzman (1955, 1956) have also developed and reported upon the success of their Survey of Study Habit Attitudes (SSHA) in adding predictability to college grades. A study by Wood and Wood (1977, unpublished) did not find the SSHA to be predictive of freshmen GPA at their college, however. Wood (1980) did find that an "internally motivated orientation" on the Ball-Chiu Goal Orientation Inventory did

predict approximately 9% of the grade point average of 222 college sophomores and juniors--and was uncorrelated with ACT scores. Witherspoon and Melberg's (1959) study of personality test prediction of GPA is typical in the low to nonexistent relationships discovered.

Summary. Results of study skill inventories and motivational measures sometimes correlate slightly with college GPA. Other personality indicators usually produce even lower relationships with college GPA.

The "Best" Predictors of College Grades

The best predictors of college grades tend to be other grades. At our institution (semi-selective, four-year university with approximately 15,000+ undergraduate students, 2000+ graduate students and 720+ faculty) the typical correlations between high school GPA and first-year freshmen GPA range around r = .55. Inclusion of SAT, ACT, and/or NDRT scores may increase the multiple R to .60 or .61 (R^2 = .37). High school students also tend to face a GPA drop of nearly half of one grade point from a mean high school GPA of 3.2 to a mean first-year college GPA of 2.6--on a four-point scale with A = 4, B = 3, C = 2, D = 1, F = 0. This college GPA (for a randomly sampled set of 125 graduated seniors) tends to move up in the later academic terms to over a 3.0 senior GPA and a cumulative college GPA that hovers around 2.7 to 3.0.

Consistency of grades in college. Wood (1982) reported a between college quarters GPA correlation ranging from .49 to .55. A randomly sampled set of 125 seniors who graduated from one of the university's seven colleges produced a third semester GPA that correlated positively (r = .51) with eventual final GPA but only poorly (r = .26)

with the GPA attained in the last semester of the junior year (third semester from graduation). ACT composite scores correlated well (.46) with the cumulative GPA but somewhat less well (.31 and .38) with individual semester GPAs.

Summary. At least one of the major problems associated with the prediction of college grades is the relatively inconsistent nature of the college grades themselves. Preliminary analyses of a larger data set appear to indicate that NDRT, ACT and SAT correlate almost as well with college grades as the consistency of college grades permit. The review of college grading practices reported by Milton, Pollio and Eison (1986) and the adaptation-level hypotheses of Goldman and Hewitt (1975) partially account for this variability of college grades.

Helping Poor Readers to Succeed in College

Improving Reading. If reading tests and their SAT and ACT siblings do predict college success about as well as can be expected (considering the irregularity of college grading policies and inter-correlations), the obvious route to improving college success is through improving the reading abilities of college (and pre-college) students. This route is allied with the improvement of study skills at BGSU and at many other institutions (Belcher, 1984; Brown, 1972; Nisbet, Ruble and Schurr, 1982; Wood and Wood, 1977). Developmental reading classes at BGSU are required for all entering freshmen scoring below the 40th percentile on the NDRT, and a special pre-entry, eight-week summer program has been created especially to improve the reading, writing, study skills and motivation of from 400 to 650 high risk high school graduates. These two programs and other academic support programs have demonstrated their ability to increase the NDRT

and study skills scores of the majority of these students, but these students still produce lower continuance rates and lower grades. A more definitive study of the success of these and similar BGSU programs is now underway. A problem in the study skills area is associated with the determination of exactly which study skills actually lead to improved learning (Annis and Annis, 1982; Garner, 1982; and Leal, 1987). A problem in the reading area lies in the differentiation between improving ability to take reading tests and actually improving student reading ability and consequent college success. Whimbey's SOAR (Stress on Analytical Reasoning) approach involves a five-week, pre-college TAPPS (Thinking Aloud Pair Problem Solving) system that appears to increase reading test scores, college grades and student retention (Whimbey, 1985).

An alternate route to success. College grades do vary from term to term, class to class, and teacher to teacher. College grades in some courses, some classes and from some teachers do vary in their relationships with reading ability and with previous success. If both of the above statements are true, and there is support for each (see MacDougall, 1977, for a study of reading and grades in some courses), an alternate or additional route to success involves assisting college faculty to better help more students to achieve success.

Four Approaches to Improving Student Success

Perhaps the most obvious approach to the improvement of the grades of poorer readers lies in modifying course tests so that they focus more upon mastery of course content and less upon the student's ability to read the questions. Several suggestions are provided by testing experts such as Norman Gronlund (1987) and include;

1) reduce the use of indirect, negatively stated or passively voiced questions that are more difficult to read and to understand than more positively stated and direct questions;
2) simplify the sentence structure and the non-course-related vocabulary of test questions and of test directions;
3) provide students with at least one practice test to permit the less testwise, less academically aware student to concretely understand your testing style. A recent (last week) test prepared according to these guidelines produced no significant correlation with a general vocabulary test given the same period but still produced a typical range of test scores.

A second possible approach to partially divorcing reading ability from student learning might lie in the extra processing of course materials believed by many to be characteristic of "cooperative learning." Johnson and Johnson (1975); Johnson, Maruyama, Johnson, Nelson and Skon (1981) and Robert Slavin (198) provide convincing evidence or arguments for the success of cooperative learning procedures.

A third set of approaches to improving classroom learning is provided by K. Patricia Cross and Thomas Angelo (1988) in their Classroom Assessment Techniques: A Handbook for Faculty. Although this handbook's name leads one to believe that it might describe summative assessment techniques for the "action-research" of teachers, in reality it provides clear descriptions of 30 formative assessment techniques that might lead to better student understanding of course content and/or effective levels of metacognition.

A fourth approach lies in employing some of the techniques associated with "mastery learning" or "personalized systems of instruction" (PSI) that are described in the companion paper by Richard Burke.

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